



# S-GW Engineering Rules

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This appendix provides Serving Gateway-specific engineering rules or guidelines that must be considered prior to configuring the ASR 5500 for your network deployment. General and network-specific rules are located in the appendix of the *System Administration Guide* for the specific network type.

The following rules are covered:

- [Interface and Port Rules, on page 1](#)
- [S-GW Service Rules, on page 2](#)
- [S-GW Subscriber Rules, on page 3](#)

## Interface and Port Rules

The assumptions and rules discussed in this section pertain to Ethernet line cards and the type of interfaces they facilitate.

## Assumptions

Overall assumptions for the S5/S8 and S11 interfaces used in the LTE EPC between Serving Gateway and PDN-GW are listed below.

- GTPv2-C is the signaling protocol used on the S5/S8 and S11 interfaces. Message and IE definitions comply with 3GPP 29.274.
- S5 and S11 interfaces use IPv6 transport as defined in 29.274, section 10.
- MSISDN is assumed to be sent by MME in initial attach.
- MEI will always be retrieved by MME from UE and sent on S11 during initial attach and UE Requested PDN connectivity procedure.
- MME will always send UE time zone information.
- The default bearer does not require any TFT.
- The PCO IE in Create Session Request shall contain two DNS server IP addresses. [S5/S8]
- UE's location change reporting support is required. [S5/S8]
- The S-GW does not verify the content of the IEs which are forwarded on the S5/S8 interface from the S11 interface. The P-GW verifies the content of all the IEs received on the S5/S8 interface.

## S1-U/S11 Interface Rules

The following engineering rules apply to the S1-U0/S11 interface:

- An S1-U/S11 interface is created once the IP address of a logical interface is bound to an S-GW service. The S-GW supports a maximum of one million S1-U peers.
- The logical interface(s) that will be used to facilitate the S1-U0/S11 interface(s) must be configured within an "ingress" context.
- S-GW services must be configured within an "ingress" context.
- At least one S-GW service must be bound to each interface, however, multiple S-GW services can be bound to a single interface if secondary addresses are assigned to the interface.
- Depending on the services offered to the subscriber, the number of sessions facilitated by the S1-U0/S11 interface can be limited.

## S5/S8 Interface Rules

This section describes the engineering rules for the S5 interface for communications between the Mobility Access Gateway (MAG) service residing on the S-GW and the Local Mobility Anchor (LMA) service residing on the P-GW.

### MAG to LMA Rules

The following engineering rules apply to the S5/S8 interface from the MAG service to the LMA service residing on the P-GW:

- An S5/S8 interface is created once the IP address of a logical interface is bound to an MAG service.
- The logical interface(s) that will be used to facilitate the S5/S8 interface(s) must be configured within the egress context.
- MAG services must be configured within the egress context.
- MAG services must be associated with an S-GW service.
- Depending on the services offered to the subscriber, the number of sessions facilitated by the S5/S8 interface can be limited.

## S-GW Service Rules

The following engineering rules apply to services configured within the system:

- A maximum of 256 services (regardless of type) can be configured per system.



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**Caution**

Large numbers of services greatly increase the complexity of management and may impact overall system performance. Only create a large number of services only be configured if your application absolutely requires it. Please contact your local service representative for more information.

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- The system maintains statistics for a maximum of 4,096 peer LMAs per MAG service.
- The total number of entries per table and per chassis is limited to 256.
- Even though service names can be identical to those configured in different contexts on the same system, this is not a good practice. Having services with the same name can lead to confusion, difficulty troubleshooting problems, and make it difficult to understand outputs of **show** commands.

## S-GW Subscriber Rules

The following engineering rule applies to subscribers configured within the system:

- A maximum of 2,048 local subscribers can be configured per context.
- Default subscriber templates may be configured on a per S-GW or MAG service.

